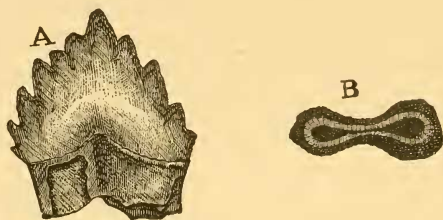


## ON A MOLAR TOOTH OF ZEUGLODON FROM THE TERTIARY BEDS ON THE MURRAY RIVER NEAR WELLINGTON, S.A.

By E. B. SANGER, ESQ., SOUTH AUSTRALIA, C.M.L.S. N.S. WALES.

The tooth and the fragments of a second were found in a bed of yellow calcareous clay, containing specimens of *Echinus*, *Spatangus*, *Clypeaster*, *Pecten*, *Turritella*, *Corbis*, and *Spondylus*. The tooth is compressed laterally, and strongly serrated on the anterior and posterior edges of the crown, forming four cusps on one edge, six on the other and one median and terminal. (See figure). The cusps increase in size from the base up, the median



E. B. Sanger, del.

A. Molar tooth of *Zeuglodon Harwoodii*, nat. size.

B. Transverse vertical section through the fangs, nat. size.

cusps being the largest. At the junction of the double fang and the crown the tooth suddenly thickens out, thus forming a ridge which runs around the tooth curving up in the middle on both sides in the "yoke" thus making a sharp line of demarcation between the crown and the fang. The crown is covered with enamel which in one place has broken or peeled off, showing the dentine beneath. The double fang is formed by two pillars connected mesially by a thin isthmus through which the pulp-cavities of the pillars are connected. The two pillars and the crown arching over them form the characteristic "yoke" from which the name is derived. The half of the tooth of which the edge bears four cusps, and its corresponding pillar or fang is larger and thicker than the other half; and the pulp-cavity of its

pillar is larger than the pulp-cavity of the other pillar. In a cross section faint lines can be seen radiating from the pulp-cavities. (See fig. B.)

The antero-posterior diameter at the base of the crown is  $\frac{9}{10}$  of an inch, the median transverse diameter  $\frac{4}{10}$ , and the median height of the crown is  $\frac{3}{4}$  of an inch. The transverse diameter of the larger fang or pillar  $\frac{3}{10}$ , and the smaller  $\cdot 25$  of an inch; the diameter of the connecting isthmus is  $\frac{1}{10}$  of an inch. The fang has been broken off, though probably it was not much longer. I am inclined to think that possibly the isthmus was wanting in the portion broken off, so that the pillars became two distinct fangs. The pillars are in fact morphologically, fangs. The tooth is possibly from a young animal as the cusps are hardly at all worn. It differs widely from a molar tooth of *Zeuglodon cetoides*. It is very much smaller and resembles somewhat a molar tooth of a seal.

The *Phocodontia*, comprising *Zeuglodon* and its kindred, in fact are connecting links between the *Cetacea* and the *Pinnipedia*. The length of *Zeuglodon cetoides* has been estimated to be seventy feet. Allowing that this tooth belonged to a young animal, I hardly think that the adult would have been over twelve or fifteen feet in length. It was evidently carnivorous. The beds in which the tooth was found are decidedly Eocene in character, though not identical with any particular division of the Eocene. I have identified from the same beds the following characteristic Eocene fossils viz.: *Lamna elegans*, *Notidanus primigenius*, *Carcharodon angustidens*, *Nautilus (Aturia) zic-zac*, *Pecten Poulsoni*, *Crassatella alta*, and *Clypeaster (Mortonia) Rogersi*. Its age corresponds therefore with *Z. cetoides*, found in the Eocene beds of the Southern United States. It is to be hoped that more traces of this interesting and aberrant Cetacean will be found. I propose naming this species, which possibly may be a new genus, *Zeuglodon Harwoodii*, in honor of James C. Harwood, Esq., formerly of

Wellington, S.A., to whose kindness I owe this and many other fine fossils.

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## NOTES AND EXHIBITS.

J. Brazier, Esq., C.M.Z.S., etc., exhibited *Helix pomatia*, *H. aperta*, and *H. melanostoma*, showing the aperture covered with a thin membrane of animal matter, giving the shells the appearance of being operculated. In *H. melanostoma* it is very thin, in the others, much thicker. Also, thirteen species of the Fossil genera *Gonitites* (? *Gonotites*), *Ammonites*, and *Rhynchonella*, all from France. And, *Voluta* (*Lyria*) *deliciosa*, with operculum, from Wautoro, near Noumea, New Caledonia.

The Vice-President exhibited a series of Fossils from the Namoi and from Campbelltown.

The Secretary.—A large excrescence or bunch of galls from an *Acacia* (green wattle), formed by *Cynips*; and the nidus of a large arboreal spider.

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## WEDNESDAY, AUGUST 28TH, 1880.

The President, the Rev. J. E. Tenison-Woods, F.G.S., etc. in the Chair.

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## DONATIONS.

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Eucalyptographia, Decade VI., from Baron F. von Mueller, K.C.M.G., etc.